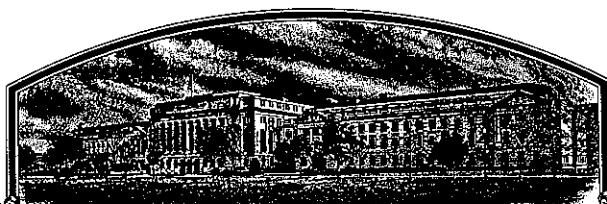


No.

8600058



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Nickerson American Plant Breeders, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (T. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'AP 4321'

In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington, D. C.
this 31st day of October in
the year of our Lord one thousand nine
hundred and eighty-six.

Kenneth H. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Ricard E. Lyng
Secretary of Agriculture

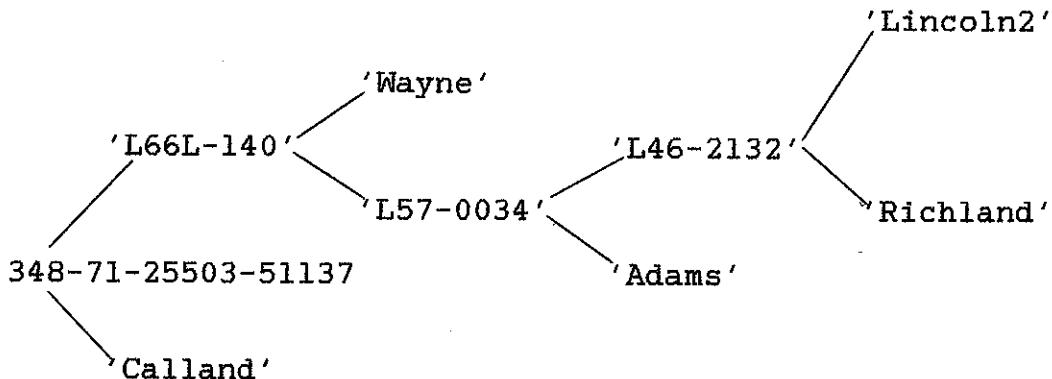
U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
WAREHOUSE & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions on reverse)

1. NAME OF APPLICANT(S) Nickerson American Plant Breeders		2. TEMPORARY DESIGNATION		3. VARIETY NAME AP 4321	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 5201 Johnson Drive P.O. Box 2925 Mission, KS 66205		5. PHONE (Include area code) (913) 384-4940		FOR OFFICIAL USE ONLY PVPO NUMBER 8600058	
6. GENUS AND SPECIES NAME Glycine max		7. FAMILY NAME (Botanical) Leguminosae		FILING DATE 1/21/86 TIME 11:05 <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.	
8. KIND NAME Soybean		9. DATE OF DETERMINATION January 1981		AMOUNT FOR FILING \$ 1800 DATE 12/23/85	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation		FEES RECEIVED \$ 200.00 DATE September 22, 1986		AMOUNT FOR CERTIFICATE	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware		12. DATE OF INCORPORATION April 1, 1983			
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Wayne Ellingson, Director of Soybean Research AgriPro Seeds Rt. 2, Hwy 30 East Ames, Iowa 50010		PHONE (Include area code): (515) 232-0691			
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED					
a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)		c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)			
b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement		d. <input type="checkbox"/> Exhibit D, Additional Description of the Variety			
e. <input checked="" type="checkbox"/> EXHIBIT E, OWNERSHIP STATEMENT BY					
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.)		f. <input type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below)		<input checked="" type="checkbox"/> No	
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?		g. <input type="checkbox"/> Foundation		<input type="checkbox"/> Registered <input type="checkbox"/> Certified	
h. <input type="checkbox"/> Yes <input type="checkbox"/> No					
17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?					
18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?					
		<input type="checkbox"/> Yes (If "Yes," give date)		<input checked="" type="checkbox"/> No	
19. HAS THE VARIETY BEEN OFFERED FOR SALE OR MARKETED IN THE U.S. OR OTHER COUNTRIES? A small quantity of seed was sold in the spring of 1985.					
		<input checked="" type="checkbox"/> Yes (If "Yes," give names of countries and dates)		<input type="checkbox"/> No	
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF APPLICANT Wayne Ellingson		DATE August 6, 1985			
SIGNATURE OF APPLICANT Robert Heiner		DATE 12-17-85			

"EXHIBIT A"
ORIGIN AND BREEDING HISTORY OF 'AP 4321'

1. AP 4321 originated in Iowa from a hand pollinated cross of '348-71-25503-51137' * Mitchell'. 348-71-25503-51137 was derived as follows:



The cross was made during the summer of 1974. The F1 generation was grown in a Puerto Rico winter nursery during the fall and winter of 1974-75. The F2-F5 generations were grown in Iowa during the summers of 1975-78. Early generations were advanced using a modified single seed decent technique. Single plants of the cross were selected and the seed planted during the summer of 1979.

2. In 1981, single plants of the variety were reselected and grown in progeny rows in 1982. Only rows conforming to a standard were harvested and bulked.

The genetic make-up of the variety was stabilized in the sixth generation (1978). The variety has remained stable and the sole purpose for reselection was for begining multiplication for commercial seed stock production. The variety was not essentially changed, but only mixtures removed that occurred during yield testing.

3. AP 4321 has been in yield tests since 1980. See the attached for 1981-84 data. AP 4321 has been tested under the experimental designation 74044-NNS G038-80, 74044-80-38 or EX038.
4. Discernible variants are not an inherent component of the variety.

NORTH AMERICAN PLANT BREEDERS INC.
SOYBEAN TRIAL SUMMARY REPORT 1983

OVER-LOCATION MEANS

TRIAL #Y3-4001

ENTRY NO.	VARIETY OR LINE	HT. (in)	LODGE (1-5)	LOC'S: CH, CM, LD, MM, PI				MEAN YIELD	RANK	STAND
				CH YIELD	CM YIELD	LD YIELD	MM YIELD			
18	STINE EX 12445	17.8	35.3	7.2	39.7	80.6	14.5	50.6	22.5	41.6
28	PVI EX7682	17.8	32.5	5.6	49.3	67.2	20.3	56.8	31.8	45.1
25	MFA MDSOY 480	19.2	33.7	6.2	45.6	66.6	21.4	53.5	30.9	43.6
01	WILLIAMS 82	19.3	37.1	6.0	54.8	73.8	17.7	49.9	30.9	45.4
19	LAWRENCE	19.3	35.7	4.2	49.1	74.2	17.1	49.6	33.0	44.6
24	RIVERSIDE 2024	19.8	40.7	7.6	44.8	66.7	18.3	54.9	29.6	42.9
02	GT1380	20.2	37.9	5.9	45.6	75.3	14.6	46.4	27.6	41.9
12	P3981	20.3	35.3	6.1	45.3	81.6	14.1	47.4	31.4	44.0
13	P4280	20.9	37.5	5.6	44.7	71.3	12.7	48.9	30.5	41.6
21	SPARKS	21.2	36.9	8.8	50.5	73.1	15.2	53.4	27.1	43.9
17	EX5734	21.3	34.5	4.0	54.5	69.9	10.6	52.9	31.6	43.9
22	AGROSOY 64	21.5	43.9	9.3	52.5	65.4	19.5	52.3	32.6	44.5
14	A3960	22.4	35.9	6.6	47.7	64.1	18.0	45.4	31.1	41.2
04	74038- 80-W0001	22.7	37.7	5.2	52.8	77.5	14.8	52.9	26.2	44.8
07	77037-A80-13176	23.0	38.2	4.3	64.6	73.3	16.5	57.1	30.9	48.5
✓05	74044- 80- 38	23.4	34.8	5.2	54.1	70.2	17.9	52.0	34.3	45.7
20	DE3070	23.7	38.4	6.4	52.5	68.9	15.3	55.3	32.7	45.0
03	AP350	23.8	40.7	6.9	49.1	73.7	15.5	55.4	30.1	44.8
16	AP420	23.8	41.3	7.4	54.6	59.6	12.6	50.1	26.3	40.7
10	77027-B80-32170	24.0	36.9	5.2	46.7	70.3	14.5	49.0	25.8	41.3
15	A4268	24.2	31.0	4.1	45.8	69.3	15.2	50.5	32.5	42.7
23	JACQUES J125	24.6	37.5	6.2	52.0	64.4	9.8	50.9	26.9	40.8
06	76030-B80-21027	24.7	36.8	5.0	57.0	75.2	13.0	51.2	29.7	45.2
09	DOUGLAS	25.3	35.8	5.0	49.7	79.6	12.2	53.7	27.1	45.0
08	MITCHELL	26.9	40.7	7.3	57.5	67.3	13.2	50.8	27.1	43.2
26	MFA MDSOY FV42	27.9	38.5	4.9	56.7	70.0	12.6	51.0	24.3	43.0
11	76196-B80-13126	29.0	40.5	4.7	51.3	65.9	17.3	51.1	26.4	42.4
27	SRF 450P	29.8	39.1	5.1	55.4	54.4	9.2	40.3	29.0	37.7
MEAN		22.8	37.3	5.9	50.8	70.3	15.1	51.2	29.4	43.4
C.V.		7.1	7.9	26.4	9.9	6.7	12.3	7.3	14.5	1.5
LSD(.05)		2.7	2.6	3.1NS	8.1	7.7	3.2	6.6	10.7	0
NO. OF REPS		12.0	15.0	15.0	3.0	3.0	3.0	3.0	5.3NS	0.0
								3.0	15.0	3.0

ENT	PEDIGREE	1961 V-2-13 TRIALS IN CONNILL CHESTER, IL			LOC1-NO-Loc2			LOC3-NO-Loc3		
		MATURITY	HEIGHT	LODDING	YIELD	LOC1 YIELD	LOC2 YIELD	LOC3 YIELD	MEAN	RANK
1	74043-NNSDG008-80	33	36	1.4	49.3	50.3	43.4	47.7	14	
2	74043-NNSDG018-80	33	34	1.8	49.5	53.1	45.9	45.9	22	
3	74043-NNSDG015-80	33	37	2.0	44.3	45.3	42.2	43.9	28	
4	74044-NNSDG002-80	27	36	2.1	50.8	51.1	40.6	47.8	16	
5	74044-NNSDG003-80	32	40	1.6	46.0	48.6	48.8	47.8	12	
6	74044-NNSDG011-80	33	38	1.9	52.9	50.3	42.6	48.6	5	
7	74044-NNSDG014-80	31	35	2.0	45.9	50.3	44.8	46.6	21	
8	74044-NNSDG016-80	32	39	2.2	50.3	50.9	44.9	49.4	4	
9	74044-NNSDG024-80	34	35	2.0	49.4	42.0	42.0	45.5	24	
10	74044-NNSDG030-80	33	36	1.8	49.7	45.2	44.3	46.6	20	
11	74044-NNSDG001-84d	27	41	2.4	49.5	50.3	42.3	48.6	8	
12	74044-NNSDG033-80	32	40	1.8	50.4	47.0	45.4	48.6	9	
13	74044-NNSDG038-80	28	32	2.0	43.0	47.8	44.4	48.6	7	
14	74044-NNSDG005-80	27	37	2.0	51.9	52.4	45.6	51.6	2	
15	74044-NNSDG061-80	26	40	2.0	45.1	52.7	43.6	45.1	23	
16	74044-NNSDG072-80	32	40	1.8	45.8	48.4	39.8	44.7	10	
17	74071-NNSDG003-80	32	40	1.2	41.1	52.6	40.0	44.7	26	
18	74076-NNSDG001-80	32	38	2.2	48.1	56.7	50.7	51.6	1	
19	74080-NNSDG009-80	31	41	2.3	55.4	51.2	50.8	50.8	3	
20	74080-NNSDG023-80	27	41	1.1	44.4	53.7	45.6	47.6	11	
21	75014-NNSDG002-80	30	39	2.0	46.5	53.6	47.8	47.8	10	
22	75014-NNSDG003-80	32	41	2.0	51.0	46.7	46.4	46.4	16	
23	75014-NNSDG019-80	32	42	2.2	45.5	54.6	46.4	47.4	15	
24	75014-NNSDG020-80	32	42	2.4	45.6	51.4	46.4	47.4	13	
25	WILLIAMS 79	20	36	2.4	46.4	49.9	46.4	47.4	17	
26	AP350 HP4800 MITCHELL	24	38	2.3	52.6	54.9	34.0	47.2	18	
27	22	30	2.3	44.9	57.1	38.0	46.6	19		
28	32	38	2.0	43.4	60.1	42.7	44.6	27		
	MEAN									
	C.V.									
	LSD(0.05)									
0	1	2	3	4	5	6	7	8	9	
1	10	11	12	13	14	15	16	17	18	
2	19	20	21	22	23	24	25	26	27	
3	28	29	30	31	32	33	34	35	36	
4	37	38	39	40	41	42	43	44	45	
5	46	47	48	49	50	51	52	53	54	
6	55	56	57	58	59	60	61	62	63	
7	64	65	66	67	68	69	70	71	72	
8	73	74	75	76	77	78	79	80	81	
9	82	83	84	85	86	87	88	89	90	
10	91	92	93	94	95	96	97	98	99	
11	90	91	92	93	94	95	96	97	98	
12	99	100	101	102	103	104	105	106	107	
13	108	109	110	111	112	113	114	115	116	

8600058

1982 Y1-05 TRIALS (LOC1-WASHINGTON, IN * LOC2-NEVADA, MO * LOC3-MEXICO, MO
LOC4-CARROLLTON, MO * LOC5-CHESTER, IL * LOC6-PAYSON, IL)

ENTRY	PEDIGREE	MATURITY	HEIGHT	LOGGING	LOC 1 YIELD	LOC 2 YIELD	LOC 3 YIELD	LOC 4 YIELD	LOC 5 YIELD	LOC 6 YIELD	MEAN YIELD	RANK
1	74045-NNS 422-79	34	36	2.1	67.2	43.1	44.3	56.0	16.6	47.6	45.8	12
2	7403A-NNS W001-H0	29	35	1.9	73.8	39.0	33.9	60.6	23.4	42.1	45.5	15
3	74041-NNS W01-H0	39	2.5	61.4	42.2	36.9	48.6	13.4	54.8	42.9	42.9	25
4	75164-NNS06002-H0DT	34	31	3.0	55.3	36.8	32.9	52.9	28.2	47.0	42.2	26
5	75175-NNS20118-H0DT	32	31	2.7	62.5	41.6	15.5	52.3	31.3	43.7	44.5	19
6	75235-NNSAG014-H0DT	31	31	1.8	64.3	43.2	30.5	60.7	18.4	50.4	44.6	18
7	74044-NNS06045-H0	31	33	1.7	70.0	42.8	34.2	53.8	16.3	49.7	44.5	20
✓8	74044-NNS0G03B-H0	31	32	1.9	74.1	44.0	30.6	60.8	16.7	54.5	46.8	8
9	74016-NNS06005-H0	33	37	2.4	70.7	41.6	36.8	54.1	17.6	44.4	44.2	21
10	75037-NNS06002-H0	31	37	2.5	69.7	40.6	25.6	51.3	24.7	48.8	43.5	24
11	75220-NNS06012-H0	32	41	2.3	69.9	45.5	37.6	55.2	19.3	48.8	46.1	11
12	74080-NNS06009-H0	35	39	2.6	66.3	44.1	26.8	54.5	28.8	49.8	45.4	16
13	74044-NNS06016-H0	37	37	1.8	71.6	41.7	40.3	57.7	20.0	48.6	46.6	10
14	74044-NNS0G037-H0	36	37	1.9	74.3	40.9	42.0	59.0	18.9	48.9	47.2	6
15	74076-NNS06001-H0	38	40	2.2	69.0	44.1	18.6	57.0	30.1	46.5	47.6	5
16	74078-NNS06028-H0	39	41	2.4	72.5	43.7	46.9	54.1	29.4	50.3	49.5	1
17	7403B-NNS06047-H0	39	39	2.0	62.2	43.0	37.0	55.8	18.7	46.8	43.9	22
18	74043-NNS0G008-H0	37	37	1.9	72.4	46.1	37.9	53.4	12.1	48.2	45.0	17
19	74044-NNS0G011-H0	35	37	1.8	72.6	41.2	34.5	61.8	16.5	46.5	45.5	14
20	75042-NNS15069-H0DT	40	34	2.2	50.5	37.3	32.6	48.6	37.9	39.4	41.0	27
21	75235-NNSAG015-H0	38	37	1.9	66.3	40.1	34.4	61.6	35.5	49.4	47.9	4
22	WILLIAMS 79	22	36	2.1	61.2	40.0	34.4	61.6	28.5	48.6	45.8	13
23	GT1380	29	35	2.2	63.4	43.6	37.5	63.0	23.5	49.5	46.7	9
24	AP450	30	40	2.5	67.4	43.9	44.1	55.1	24.2	51.6	47.1	7
25	HP4600	31	28	2.0	71.4	39.1	36.9	54.7	29.2	52.0	43.9	23
26	MITCHELL	34	38	2.4	72.4	43.4	38.5	56.8	27.2	50.6	48.1	3
27	H DALLAS	37	41	2.6	69.8	42.7	40.1	65.7	29.1	45.9	48.9	2
28	ESSEX	44	30	2.1	64.0	32.5	16.4	41.7	42.0	41.2	39.8	28
MEAN		33.3	35.6	2.1	67.2	41.7	35.8	55.9	23.4	48.0	46.7	
LSD(.05)		1.4	2.1	0.2	6.8	6.2	5.6	8.5	14.2	6.9	15	
CV (%)		5.7	8.3	16.0	6.2	9.1	9.7	9.3	30.5	8.8	9.8	

5

NICKERSON AMERICAN PLANT BREEDERS INC.
SOYBEAN TRIAL SUMMARY REPORT 1984

OVER-LOCATION MEANS TRIAL #Y3-4001

LOC'S: IL, MN, MR, OM, WI

ENTRY NO.	VARIETY OR LINE	MAT.	HT. (in)	LODGE (1-5)	IL YIELD	MM YIELD	MR YIELD	OM YIELD	WI YIELD	MEAN YIELD	YIELD RANK	SEED QUAL
04	78015-B81-17024	17.5	36.1	1.9	24.0	31.7	42.0	15.8	50.4	32.8	26	4.3
07	P3981	17.7	38.5	2.1	24.3	26.8	48.9	13.2	46.3	31.9	28	2.8
01	78015-B81-17021	18.7	36.8	2.5	25.2	31.4	46.2	14.9	41.6	31.9	27	4.5
02	WILLIAMS 82	22.0	39.3	1.9	28.6	32.9	44.9	21.0	52.5	36.0	18	2.7
03	EX5734	22.5	38.5	1.7	23.9	37.7	48.8	14.2	58.0	36.5	17	3.0
06	GOLD TAG 1380	23.3	38.9	2.3	25.3	37.6	51.0	13.9	58.3	37.2	14	3.2
03	79110-M81-11287	24.7	40.1	1.8	26.8	31.9	48.7	19.8	49.6	35.4	25	3.0
11	UNION	25.7	43.7	2.7	26.8	39.4	41.6	19.9	50.9	35.7	20	3.3
19	79101-B81-01121	26.0	39.5	1.6	30.4	40.4	55.6	17.7	56.4	40.1	6	3.5
05	LAWRENCE	26.2	38.3	1.7	29.1	43.6	55.2	18.8	60.9	41.5	2	3.7
10	78110-B81-11090	26.5	36.6	1.8	26.8	39.8	56.2	17.9	54.7	39.1	8	3.5
14	77087-A80-13176	26.7	41.9	2.3	23.3	36.0	48.2	19.7	51.2	35.7	21	3.7
08	SPARKS	27.2	44.6	3.3	24.1	40.1	55.8	18.2	55.9	38.8	9	3.3
26	79110-M81-05312	28.7	39.1	1.8	33.5	39.9	50.7	23.8	54.1	40.4	5	3.0
15	74044- 80-38	28.8	39.2	1.8	31.4	45.8	52.1	20.2	58.0	41.5	3	3.0
17	AP350	29.2	44.1	3.1	23.4	42.0	51.6	16.8	60.3	38.8	10	3.2
21	76030-B80-21027	29.3	38.6	2.1	25.3	39.4	42.8	17.0	55.7	36.0	19	3.0
12	78110-B81-08128	29.5	43.1	2.3	27.5	43.5	53.7	13.9	58.5	39.4	7	3.2
24	78092-M81-34252	29.7	38.1	2.4	26.0	39.1	53.2	20.7	54.6	38.8	11	2.7
18	AP420	30.0	47.7	3.0	22.5	38.0	52.8	16.5	47.8	35.5	24	3.3
16	DE3000	30.7	41.3	2.5	24.1	39.8	49.3	20.0	53.9	37.4	13	3.2
13	78105-M81-36233	31.8	46.1	2.5	24.2	35.4	48.8	17.1	52.4	35.6	23	2.7
27	79110-M81-06288	32.3	41.1	2.1	30.9	40.3	44.1	20.5	53.9	37.9	12	3.3
25	DOUGLAS	37.7	40.5	2.2	26.4	36.9	50.7	17.7	53.8	37.1	16	3.3
28	MITCHELL	38.5	43.8	3.0	36.9	40.6	54.8	22.8	53.6	41.7	1	3.2
20	79101-M81-39344	41.5	43.3	2.4	31.9	45.3	50.5	23.8	54.0	41.1	4	2.6
22	79111-M81-03354	43.7	43.9	2.5	29.2	38.1	40.0	19.1	52.1	35.7	22	3.3
23	79101-M81-30346	44.5	45.3	2.5	28.4	42.6	44.6	23.6	46.4	37.1	15	2.7
	MEAN	28.9	41.0	2.3	27.2	38.4	49.4	18.5	53.4	37.4	3.2	
	C.V.	11.2	7.4	17.7	12.1	8.1	10.1	12.2	7.0	10.8	.0	
	LSD(.05)	4.7	2.3	.4	5.3	5.0	8.1	3.7	6.1	4.2	.0NS	
	NO. OF REPS	6.0	15.0	15.0	3.0	3.0	3.0	3.0	3.0	15.0	3.0	

6

8600158

"EXHIBIT B"
(No. 8600058, 'AP 4321')

Novelty is based on the unique combination of the following characters:

AP 4321 is most similar to the variety 'A3127'. However, AP 4321 differs from A3127 in maturity and pod color.

1. AP 4321 is an early to mid Group IV variety where A3127 is an early to mid Group III.
2. AP 4321 has brown pod color where A3127 has tan.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) Nickerson American Plant Breeders	TEMPORARY DESIGNATION	VARIETY NAME AP 4321
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 5201 Johnson Drive Mission, KS 66201	FOR OFFICIAL USE ONLY	
	PVPN NUMBER	8600058

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., **0 9**).

1. SEED SHAPE:

2



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)

3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)

2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)

4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

2. SEED COAT COLOR: (Mature Seed)

1

1 = Yellow

2 = Green

3 = Brown

4 = Black

5 = Other (Specify) _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1

1 = Dull ('Corsoy 79'; 'Braxton')

2 = Shiny ('Nebsoy'; 'Gasoy 17')

4. SEED SIZE: (Mature Seed)

1 **6**

Grams per 100 seeds

5. HILUM COLOR: (Mature Seed)

6

1 = Buff

2 = Yellow

3 = Brown

4 = Gray

5 = Imperfect Black

6 = Black

7 = Other (Specify) _____

6. COTYLEDON COLOR: (Mature Seed)

1

1 = Yellow

2 = Green

7. SEED PROTEIN PEROXIDASE ACTIVITY:

2

1 = Low

2 = High

8. SEED PROTEIN ELECTROPHORETIC BAND:

2

1 = Type A (SP1^a)

2 = Type B (SP1^b)

9. HYPOCOTYL COLOR:

4

1 = Green only ('Evans'; 'Davis')

2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')

3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')

4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

10. LEAFLET SHAPE:

3

1 = Lanceolate

2 = Oval

3 = Ovate

4 = Other (Specify) _____

11. LEAFLET SIZE:

- 1 = Small ('Amsoy 71'; 'A5312')
 3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

12. LEAF COLOR:

- 1 = Light Green ('Weber'; 'York')
 3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

13. FLOWER COLOR:

- 2 = White 2 = Purple 3 = White with purple throat

14. POD COLOR:

- 2 = Tan 2 = Brown 3 = Black

15. PLANT PUBESCENCE COLOR:

- 2 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

- 2 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton')
 3 = Bushy ('Gnome'; 'Govan')

17. PLANT HABIT:

- 2 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will')
 3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

18. MATURITY GROUP:

- | | | | | | | | | |
|----------------------------|---------|----------|-----------|---------|--------|---------|--------|-------|
| <input type="checkbox"/> 7 | 1 = 000 | 2 = 00 | 3 = 0 | 4 = I | 5 = II | 6 = III | 7 = IV | 8 = V |
| | 9 = VI | 10 = VII | 11 = VIII | 12 = IX | 13 = X | | | |

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)**BACTERIAL DISEASES:**

- 0 Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)
 0 Bacterial Blight (*Pseudomonas glycinea*)
 0 Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

- 0 Brown Spot (*Septoria glycines*)

Frogeye Leaf Spot (*Cercospora sojina*)

- | | | | | | |
|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|
| <input type="checkbox"/> 0 Race 1 | <input type="checkbox"/> 0 Race 2 | <input type="checkbox"/> 0 Race 3 | <input type="checkbox"/> 0 Race 4 | <input type="checkbox"/> 0 Race 5 | <input type="checkbox"/> Other (Specify) _____ |
|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|

- 0 Target Spot (*Corynespora cassiicola*)

- 0 Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)

- 0 Powdery Mildew (*Microsphaera diffusa*)

- 1 Brown Stem Rot (*Cephalosporium gregatum*)

- 0 Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

9

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)**FUNGAL DISEASES: (Continued)**

- 1 Pod and Stem Blight (*Diaporthe phaseolorum* var. *sojae*)
 0 Purple Seed Stain (*Cercospora kikuchii*)
 0 Rhizoctonia Root Rot (*Rhizoctonia solani*)

Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)

- | | | | | | | |
|--|--|--|--|--|--|--|
| <input checked="" type="checkbox"/> 1 Race 1 | <input checked="" type="checkbox"/> 1 Race 2 | <input checked="" type="checkbox"/> 1 Race 3 | <input checked="" type="checkbox"/> 1 Race 4 | <input checked="" type="checkbox"/> 1 Race 5 | <input checked="" type="checkbox"/> 1 Race 6 | <input checked="" type="checkbox"/> 1 Race 7 |
| <input checked="" type="checkbox"/> 1 Race 8 | <input checked="" type="checkbox"/> 1 Race 9 | <input type="checkbox"/> | Other (Specify) _____ | | | |

VIRAL DISEASES:

- 0 Bud Blight (Tobacco Ringspot Virus)
 0 Yellow Mosaic (Bean Yellow Mosaic Virus)
 0 Cowpea Mosaic (Cowpea Chlorotic Virus)
 0 Pod Mottle (Bean Pod Mottle Virus)
 0 Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:**Soybean Cyst Nematode (*Heterodera glycines*)**

- | | | | | | |
|--|--|--|--|--------------------------|-----------------------|
| <input checked="" type="checkbox"/> 1 Race 1 | <input checked="" type="checkbox"/> 1 Race 2 | <input checked="" type="checkbox"/> 1 Race 3 | <input checked="" type="checkbox"/> 1 Race 4 | <input type="checkbox"/> | Other (Specify) _____ |
|--|--|--|--|--------------------------|-----------------------|

Lance Nematode (*Hoplolaimus Colombus*)

- 0 Southern Root Knot Nematode (*Meloidogyne incognita*)
 0 Northern Root Knot Nematode (*Meloidogyne Hapla*)
 0 Peanut Root Knot Nematode (*Meloidogyne arenaria*)
 0 Reniform Nematode (*Rotylenchulus reniformis*)

OTHER DISEASE NOT ON FORM (Specify): _____**20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)**

- 0 Iron Chlorosis on Calcareous Soil
 Other (Specify) _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- 0 Mexican Bean Beetle (*Epilachna varivestis*)
 0 Potato Leaf Hopper (*Empoasca fabae*)
 Other (Specify) _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	A3127	Seed Coat Luster	Pella
Leaf Shape	A3127	Seed Size	A3127
Leaf Color	A3127	Seed Shape	Vickery
Leaf Size	HP 3033S	Seedling Pigmentation	A3127

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
Submitted	131	2.0	108	8.0	10.9	33.8	20.7	16	NA
A3127 Name of Similar Variety	124	2.0	105	8.1	11.5	NA	NA	16	NA

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A₂ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

"EXHIBIT E"
(No. 8600058, 'AP 4321')

Nickerson American Plant Breeders, through various changes in corporate structure and purchases, are sole owners of the assets of the previous companies North American Plant Breeders and AgriPro, Inc. The ownership comprises all the soybean genetic material, including the variety AP 4321.

Wayne Ellingson
Signature

Wayne R. Ellingson
Director of Soybean Research